Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-4. (Canceled)

5. (Currently Amended) A method of processing burst information in a transmission link, comprising the steps of:

receiving a sampled waveform containing a record of symbols imposed on a carrier signal;

determining symbol phase of said record of symbols utilizing one or more metrics;

processing said sample waveform to remove said carrier signal;

calculating phase ambiguity of the burst information;

resolving phase ambiguity of said sample waveform using the calculated phase ambiguity; and

indexing an arrival time of the burst information;

wherein said symbol phase is determined with 5-points of correlation using sinusoidal functions.

6-22. (Canceled)

23. (Previously Presented) An apparatus for processing burst information in a transmission link, comprising:

a waveform sampler for sampling a received waveform imposed on a carrier signal, said sampled waveform having a record of symbols;

a determinator for determining symbol phase of said record of symbols utilizing one or more metrics;

a processor for processing said sampled waveform to remove said carrier signal;

a resolver for determining phase ambiguity of the burst information; and

a detector for detecting a time of arrival of the burst information;

wherein said symbol phase is determined with 5-points of correlation using sinusoidal functions.

24-38. (Canceled)

39. (Currently Amended) A method of processing burst information in a transmission link, comprising the steps of:

receiving a sampled waveform containing a record of symbols imposed on a carrier signal;

determining symbol timing of said record of symbols utilizing one or more metrics;

processing said sample waveform to remove said carrier signal by:

estimating residual carrier phase and frequency; and

down-converting to remove said carrier signal; and

determining phase ambiguity and burst arrival time by detecting a unique pattern of symbols word in said record of symbols**, wherein phase ambiguity of said sample waveform is resolved using the determined phase ambiguity**;

wherein symbol phase of said symbol timing is determined with 5-points of correlation using sinusoidal functions.

40-49. (Canceled)

50. (Previously Presented) An apparatus for processing burst information in a transmission link, comprising:

a waveform sampler for sampling a received waveform imposed on a carrier signal, said sampled waveform having a record of symbols;

a determinator of determining symbol timing of said record of symbols utilizing one or more metrics;

a processor for processing said sampled waveform in phase and frequency to remove said carrier signal;

a resolver for resolver phase ambiguity of burst information; and

a detector for detecting a time of arrival of the burst information;

wherein symbol phase of said symbol timing is determined with 5-points of correlation using sinusoidal functions.

51-62. (Canceled)

63. (Currently Amended) A method of processing burst information in a transmission link, comprising the steps of:

receiving a sampled waveform containing a record of symbols imposed on a carrier signal;

determining symbol timing of said record of symbols utilizing one or more metrics;

processing said sample waveform in phase and frequency to remove said carrier signal;

calculating phase ambiguity of the burst information;

resolving phase ambiguity of said sample waveform using said calculated phase ambiguity; and

indexing an arrival time of the burst information;

wherein symbol phase of said symbol timing is determined in the step of determining with 5-points of correlation using sinusoidal functions.

64-80. (Canceled)

81. (Currently Amended) A method of processing burst information in a transmission link, comprising the steps of:

receiving a sampled waveform containing a record of symbols imposed on a carrier signal;

determining symbol timing of said record of symbols utilizing one or more metrics;

processing said sample waveform to remove said carrier signal; and

calculating phase ambiguity and time of arrival of the burst information by midamble detection**, wherein phase ambiguity of said sample waveform is resolved using the calculated phase ambiguity**;

wherein symbol phase of said symbol timing is determined in the step of determining with 5-points of correlation using sinusoidal functions.

82-93. (Canceled)

94. (Previously Presented) The method recited in Claim 5, further comprising:

locating a unique bit pattern of symbols in said record, said locating step comprising:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

95. (Previously Presented) The method recited in Claim 5, further comprising:

locating a unique bit pattern of symbols in said record, wherein:

said unique bit pattern of symbols comprises an extended Hamming code word compatible for use in forward error correction decoding, and

said locating step comprises:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

96. (Previously Presented) The method recited in Claim 5, further comprising:

locating a unique bit pattern of symbols in said record, said locating step comprising:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols, wherein:

said correlation parameters comprise a time offset value and a phase rotation value which are used to generate said maximum positive correlation.

97. (Previously Presented) The method recited in Claim 5, wherein:

said sampled waveform is derived from a single channel per carrier waveform, and

said single channel comprises a plurality of time slices.

98. (Previously Presented) The method recited in Claim 5, wherein said sampled waveform is derived from a TDMA signal.

99. (Previously Presented) The method recited in Claim 5, wherein the step of processing comprises:

estimating residual carrier phase and frequency, and

down-converting to remove said carrier signal.

100. (Previously Presented) The method recited in Claim 5, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and padded.

101. (Previously Presented) The method recited in Claim 5, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and unpadded.

102. (Previously Presented) The method recited in Claim 5, wherein said carrier signal is transmitted wirelessly.

103. (Previously Presented) The method recited in Claim 5, wherein said carrier signal is transmitted wirelessly as part of a satellite return transmission link.

104. (Previously Presented) The method recited in Claim 5, wherein at least one of said one or more metrics is a maximized square symbol amplitude.

105. (Previously Presented) The method recited in Claim 5, wherein at least one of said one or more metrics is a maximized symbol amplitude.

106. (Previously Presented) The method recited in Claim 5, wherein at least one of said one or more metrics is a minimized symbol variance.

107. (Previously Presented) The apparatus recited in Claim 23, further comprising:

a locator for locating a unique bit pattern of symbols in said record, said locator comprising a correlator for correlating said record of symbols with one or more predetermined sequences of symbols; and

a selector for selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

108. (Previously Presented) The apparatus recited in Claim 23, further comprising:

a locator for locating a unique bit pattern of symbols in said record,

said unique bit pattern of symbols comprises an extended Hamming code word compatible for use in forward error correction decoding, and

said locator comprising a correlator for correlating said record of symbols with one or more predetermined sequences of symbols; and

a selector for selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

109. (Previously Presented) The apparatus recited in Claim 23, further comprising:

a locator for locating a unique bit pattern of symbols in said record, said locator comprising a correlator for correlating said record of symbols with one or more predetermined sequences of symbols; and

a selector for selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols,

wherein said correlation parameters comprise a time offset value and a phase rotation value which are used to generate said maximum positive correlation.

110. (Previously Presented) The apparatus recited in Claim 23, wherein:

said sampled waveform is derived from a single channel per carrier waveform, and

said single channel comprises a plurality of time slices.

111. (Previously Presented) The apparatus recited in Claim 23, wherein said sampled waveform is derived from a TDMA signal.

112. (Previously Presented) The apparatus recited in Claim 23, wherein the processor comprises:

an estimator for estimating residual carrier phase and frequency, and

a demodulator for down-converting to remove said carrier signal.

113. (Previously Presented) The apparatus recited in Claim 23, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and padded.

114. (Previously Presented) The apparatus recited in Claim 23, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and unpadded.

115. (Previously Presented) The apparatus recited in Claim 23, wherein said carrier signal is transmitted wirelessly.

116. (Previously Presented) The apparatus recited in Claim 23, wherein said carrier signal is transmitted wirelessly as part of a satellite return transmission link.

117. (Previously Presented) The apparatus recited in Claim 23, wherein at least one of said one or more metrics is a maximized square symbol amplitude.

118. (Previously Presented) The apparatus recited in Claim 23, wherein at least one of said one or more metrics is a maximized symbol amplitude.

119. (Previously Presented) The apparatus recited in Claim 23, wherein at least one of said one or more metrics is a minimized symbol variance.

120. (Previously Presented) The method recited in Claim 39, further comprising:

locating a unique bit pattern of symbols in said record, said locating step comprising:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

121. (Previously Presented) The method recited in Claim 39, further comprising:

locating a unique bit pattern of symbols in said record, wherein:

said unique bit pattern of symbols comprises an extended Hamming code word compatible for use in forward error correction decoding, and

said locating step comprises:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

122. (Previously Presented) The method recited in Claim 39, further comprising:

locating a unique bit pattern of symbols in said record, said locating step comprising:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols, wherein:

said correlation parameters comprise a time offset value and a phase rotation value which are used to generate said maximum positive correlation.

123. (Previously Presented) The method recited in Claim 39, wherein:

said sampled waveform is derived from a single channel per carrier waveform, and

said single channel comprises a plurality of time slices.

124. (Previously Presented) The method recited in Claim 39, wherein said sampled waveform is derived from a TDMA signal.

125. (Previously Presented) The method recited in Claim 39, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and padded.

126. (Previously Presented) The method recited in Claim 39, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and unpadded.

127. (Previously Presented) The method recited in Claim 39, wherein said carrier signal is transmitted wirelessly.

128. (Previously Presented) The method recited in Claim 39, wherein said carrier signal is transmitted wirelessly as part of a satellite return transmission link.

129. (Previously Presented) The method recited in Claim 39, wherein at least one of said one or more metrics is a maximized square symbol amplitude.

130. (Previously Presented) The method recited in Claim 39, wherein at least one of said one or more metrics is a maximized symbol amplitude.

131. (Previously Presented) The method recited in Claim 39, wherein at least one of said one or more metrics is a minimized symbol variance.

132. (Previously Presented) The apparatus recited in Claim 50, further comprising:

a locator for locating a unique bit pattern of symbols in said record, said locator comprising a correlator for correlating said record of symbols with one or more predetermined sequences of symbols; and

a selector for selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

133. (Previously Presented) The apparatus recited in Claim 50, further comprising:

a locator for locating a unique bit pattern of symbols in said record,

said unique bit pattern of symbols comprises an extended Hamming code word compatible for use in forward error correction decoding, and

said locator comprising a correlator for correlating said record of symbols with one or more predetermined sequences of symbols; and

a selector for selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

134. (Previously Presented) The apparatus recited in Claim 50, further comprising:

a locator for locating a unique bit pattern of symbols in said record, said locator comprising a correlator for correlating said record of symbols with one or more predetermined sequences of symbols; and

a selector for selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols,

wherein said correlation parameters comprise a time offset value and a phase rotation value which are used to generate said maximum positive correlation.

135. (Previously Presented) The apparatus recited in Claim 50, wherein:

said sampled waveform is derived from a single channel per carrier waveform, and

said single channel comprises a plurality of time slices.

136. (Previously Presented) The apparatus recited in Claim 50, wherein said sampled waveform is derived from a TDMA signal.

137. (Previously Presented) The apparatus recited in Claim 50, wherein the processor comprises:

an estimator for estimating residual carrier phase and frequency, and

a demodulator for down-converting to remove said carrier signal.

138. (Previously Presented) The apparatus recited in Claim 50, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and padded.

139. (Previously Presented) The apparatus recited in Claim 50, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and unpadded.

140. (Previously Presented) The apparatus recited in Claim 50, wherein said carrier signal is transmitted wirelessly.

141. (Previously Presented) The apparatus recited in Claim 50, wherein said carrier signal is transmitted wirelessly as part of a satellite return transmission link.

142. (Previously Presented) The apparatus recited in Claim 50, wherein at least one of said one or more metrics is a maximized square symbol amplitude.

143. (Previously Presented) The apparatus recited in Claim 50, wherein at least one of said one or more metrics is a maximized symbol amplitude.

144. (Previously Presented) The apparatus recited in Claim 50, wherein at least one of said one or more metrics is a minimized symbol variance.

145. (Previously Presented) The method recited in Claim 63, further comprising:

locating a unique bit pattern of symbols in said record, said locating step comprising:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

146. (Previously Presented) The method recited in Claim 63, further comprising:

locating a unique bit pattern of symbols in said record, wherein:

said unique bit pattern of symbols comprises an extended Hamming code word compatible for use in forward error correction decoding, and

said locating step comprises:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

147. (Previously Presented) The method recited in Claim 63, further comprising:

locating a unique bit pattern of symbols in said record, said locating step comprising:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols, wherein:

said correlation parameters comprise a time offset value and a phase rotation value which are used to generate said maximum positive correlation.

148. (Previously Presented) The method recited in Claim 63, wherein:

said sampled waveform is derived from a single channel per carrier waveform, and

said single channel comprises a plurality of time slices.

149. (Previously Presented) The method recited in Claim 63, wherein said sampled waveform is derived from a TDMA signal.

150. (Previously Presented) The method recited in Claim 63, wherein the step of processing comprises:

estimating residual carrier phase and frequency, and

down-converting to remove said carrier signal.

151. (Previously Presented) The method recited in Claim 63, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and padded.

152. (Previously Presented) The method recited in Claim 63, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and unpadded.

153. (Previously Presented) The method recited in Claim 63, wherein said carrier signal is transmitted wirelessly.

154. (Previously Presented) The method recited in Claim 63, wherein said carrier signal is transmitted wirelessly as part of a satellite return transmission link.

155. (Previously Presented) The method recited in Claim 63, wherein at least one of said one or more metrics is a maximized square symbol amplitude.

156. (Previously Presented) The method recited in Claim 63, wherein at least one of said one or more metrics is a maximized symbol amplitude.

157. (Previously Presented) The method recited in Claim 63, wherein at least one of said one or more metrics is a minimized symbol variance.

158. (Previously Presented) The method recited in Claim 81, further comprising:

locating a unique bit pattern of symbols in said record, said locating step comprising:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

159. (Previously Presented) The method recited in Claim 81, further comprising:

locating a unique bit pattern of symbols in said record, wherein:

said unique bit pattern of symbols comprises an extended Hamming code word compatible for use in forward error correction decoding, and

said locating step comprises:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols.

160. (Previously Presented) The method recited in Claim 81, further comprising:

locating a unique bit pattern of symbols in said record, said locating step comprising:

correlating said record of symbols with one or more predetermined sequences of symbols, and

selecting correlation parameters associated with a maximum positive correlation of said record of symbols and said one or more predetermined sequences of symbols, wherein:

said correlation parameters comprise a time offset value and a phase rotation value which are used to generate said maximum positive correlation.

161. (Previously Presented) The method recited in Claim 81, wherein:

said sampled waveform is derived from a single channel per carrier waveform, and

said single channel comprises a plurality of time slices.

162. (Previously Presented) The method recited in Claim 81, wherein said sampled waveform is derived from a TDMA signal.

163. (Previously Presented) The method recited in Claim 81, wherein the step of processing comprises:

estimating residual carrier phase and frequency, and

down-converting to remove said carrier signal.

164. (Previously Presented) The method recited in Claim 81, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and padded.

165. (Previously Presented) The method recited in Claim 81, wherein the step of processing comprises:

computing a FFT on a block of symbols of said record of symbols, wherein said block of symbols is fixed and unpadded.

166. (Previously Presented) The method recited in Claim 81, wherein said carrier signal is transmitted wirelessly.

167. (Previously Presented) The method recited in Claim 81, wherein said carrier signal is transmitted wirelessly as part of a satellite return transmission link.

168. (Previously Presented) The method recited in Claim 81, wherein at least one of said one or more metrics is a maximized square symbol amplitude.

169. (Previously Presented) The method recited in Claim 81, wherein at least one of said one or more metrics is a maximized symbol amplitude.

170. (Previously Presented) The method recited in Claim 81, wherein at least one of said one or more metrics is a minimized symbol variance.